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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,037	05/30/2001	Hirokazu Yano	2204-010851	6743

7590 04/08/2004
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EXAMINER

AHMED, SHEEBA

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/870,037	YANO ET AL.	
	Examiner	Art Unit	
	Sheeba Ahmed	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Amendment

1. Amendments to claims 1 and 8 have been entered in the above-identified application. Claim 6 has been cancelled. **Claims 1-5 and 7-20 are pending.**

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-5, 7-9, and 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshimi et al. (US 6,562,474 B1).

Yoshimi et al. disclose an organic coating steel sheet inducing no pollution problem and providing excellent corrosion resistance without the use of a chromate

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treatment (Column 4, lines 64-67). The organic coating steel sheet obtains high anti-corrosive performance by blending adequate amount of an ion-exchanged silica with an organic coating (Column 6, lines 63-67) because the ion exchange action emits Ca ion from the surface of the silica which precipitates in the vicinity of the plating interface and forms Ca(OH)_2 precipitate which seals defects as a dense product to suppress corrosion reactions (Column 7, lines 1-15). The ion-exchanged silica consists mainly of porous silica (Column 7, lines 54-55). A preferred range of Ca concentration in the Ca ion-exchanged silica is 2 to 8wt.% (Column 18, lines 34-36). A preferred range of blending ratio of the ion-exchanged silica in the organic resin coating is 1 to 100 parts by weight based on 100 parts by weight of the film-forming resin (Column 18, lines 62-67). Examples of the zinc base plated steel sheet of the organic coating steel sheet include Zn-Al alloy plated steel sheet (Column 8, lines 1-10). The coating may further contain an organic resin and examples include epoxy, polyurethane, acrylic resin, polyester and polyethylene resins. For further improving the corrosion resistance, the coating further contains polyphosphate such as aluminum dihydrogen phosphate and zinc phosphate (Column 10, lines 10-30). The preferred blending ratio of the phosphate to the organic resin coating is 1 to 100 parts by weight based on a 100-parts by weight of the film-forming resin (Column 11, lines 37-45). The surface of the Zn base plated steel sheet may be treated with an acidic aqueous solution (Column 22, lines 35-40). All limitations of claims 1-5, 7-9, and 15-20 are disclosed in the above reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urata et al. (US 6,015,628) in view of Sasaki et al. (US 5,716,255).

Urata et al. disclose an organic composite coated steel sheet (Column 1, lines 8-10) comprising a rolled steel sheet base, a zinc or zinc-alloy plated layer, a chromate layer formed on the zinc or zinc alloy plated layer, and an organic film formed on the chromate layer. The organic film (**corresponding to the paint composition of the claimed invention**) comprises an epoxy resin (**corresponding to the base resin of the claimed invention and thus meeting the limitations of claims 2**) and a rust preventive additive (Column 9, lines 1-68 and Column 10, lines 46-63). The amount of the rust preventive additive is 3 to 50% by weight (**thus meeting the limitations of claims 4**) and examples include silica and aluminum dihydrogen triphosphosphate (**corresponding to polyphosphate of the claimed invention and meeting the limitations of claims 5**) (Column 21, lines 20-40). Corrosion-inhibiting activity may be further improved by using ion-exchanged hydrophilic silica wherein the cation is calcium ion (**corresponding to Ca ion-exchanged porous silica claimed invention**) (Column 22, lines 23-35).

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Urata et al. do not disclose that the organic film may comprise both the ion-exchanged silica and the aluminum dihydrogen tripolyphosphate.

However, Sasaki et al. disclose a sealing material which has better durability and comprises an aluminum phosphate and a silica wherein the amount of the silica is 15 to 50% by weight with the balance being the aluminum phosphate.

Accordingly, it would have been obvious to one having ordinary skill in the art to use both the ion-exchanged silica and the aluminum dihydrogen tripolyphosphate in the organic film disclosed by Urata et al. wherein the amount of the ion-exchanged silica is 15 to 50% by weight and the balance is aluminum dihydrogen tripolyphosphate given that Sasaki et al. teach that the combination of the silica and the aluminum phosphate in the claimed ratio provides better durability. With regards to the limitation, as recited in independent claim 1, that the composition is positionable on a surface of a metal sheet without an interposition of a chromium containing layer, the Examiner takes the position that the composition taught by Urata is inherently capable of meeting such a limitation given that the composition may be placed on a metal sheet without any underlying layers.

4. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimi et al. (US 6,562,474 B1) in view of Nagashima et al. (US 6,180,177 B1).

Yoshimi et al., as discussed above, do not teach that the surface of the Zn base plated steel sheet may be treated with a fluoroacid solution.

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However, Nagashima et al. disclose a surface treatment agents for metallic materials which can impart corrosion resistance and provides improved paint adherence to the metallic materials (Column 1, lines 10-15 and Column 8, lines 2-41). The surface treatment agent comprises fluoroacids which contain four or more fluorine atoms and one or more elements selected from the group consisting of titanium, zirconium, silicon, hafnium, aluminum and boron (Column 2, lines 50-60).

Accordingly, it would have been obvious to one having ordinary skill in the art to treat the base metal sheet disclosed by Yoshimi et al. with a surface treatment agent comprising a fluoroacid which contains four or more fluorine atoms and one or more elements selected from the group consisting of titanium, zirconium, silicon, hafnium, aluminum and boron given that Nagashima et al. specifically teach that doing so can impart corrosion resistance and provides improved paint adherence to metallic materials. Furthermore, the Examiner takes the position that a surface treated with the surface treatment agent disclosed by Nagashima et al. would necessarily provide the deposited surface with fluorides in the claimed amount given that the chemical composition of the surface treatment agent and the manner of application as disclosed by Nagashima et al. and that of the claimed invention are identical.

Response to Arguments

5. Applicant's arguments, regarding claims 1-5 and 7, filed on January 8, 2004 have been fully considered but they are not persuasive. Applicants traverse the rejection under 35 U.S.C. 103(a) as being unpatentable over Urata et al. (US 6,015,628) in view

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of Sasaki et al. (US 5,716,255) and submit that the present invention is chromium-free and achieves corrosion resistance without the use of a chromate layer intermediate to a metal sheet and an organic resin layer. However, the Examiner would like to point out that claims 1-5 and 7 are directed to a coating composition and hence the limitation "said composition is positionable on a surface of a metal sheet without an interposition of a chromium containing layer" simply describes the ability of the coating to be placed on the surface of a metal sheet and the Examiner takes the position that the composition taught by Urata is *capable* of being placed on the surface of a metal sheet without any underlying layers.


Conclusion

6Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (571)272-1504. The examiner can normally be reached on Mondays and Thursdays from 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (571)272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sheeba Ahmed
Art Unit 1773
April 2, 2004